Vol. 50, pp. 63–68 April 21, 1937

PROCEEDINGS

OF THE

BIOLOGICAL SOCIETY OF WASHINGTON

NEW RACES OF THE GENUS OTUS FROM NORTHWESTERN MEXICO.

BY ROBERT T. MOORE,
California Institute of Technology.

Two of the rarest owls of the genus *Otus* are *Megascops vinaceous* Brewster of Chihuahua and *Megascops hastatus* Ridgway of Sinaloa. Of the latter only four specimens hitherto have been recorded, including the type and one other from the Arid Lower Tropical Zone of Sinaloa. Of the former, the type from Durasno, Chihuahua, has been unique. These two species, although patently differentiated by diagnostic markings and noteworthy differences in the toes, have been confused by ornithologists. In his "Key to Species of American Owls," Nov. 1934, Leon Kelso, by an understandable misconception, was led into crediting *vinaceous* as taken at Guirocoba, Sonora (Dickey Collection No. 30832), and giving its range as the "Arid Tropical Zone." The unique type was taken at Durasno, a mining town on the high tableland of Chihuahua and the Guirocoba specimen is not *vinaceous*. This misconception was based on the faulty identification of it in van Rossem's "Sonora Land Birds," as the "second known specimen of *vinaceous*." The type of *vinaceous* was inspected on a visit to the Museum of Comparative Zoology in 1933, and, thanks to the courtesy of Dr. Friedmann of the United States National Museum, the type of *hastatus* was placed in my custody. Subsequently a correction was made in van Rossem's "Middle American Birds," stating that the Dickey Collection specimen "is *Otus hastatus hastatus* (Ridgway)." The gradual accumulation of nine new individuals, five similar to *vinaceous* and four to *hastatus*, makes necessary a reconsideration of this last statement.

These accessions indicate that two new races are involved, one a true Arid Lower Tropical form of *vinaceous* inhabiting the cacti deserts of northwestern Sinaloa and the second a Transition and Arid Upper Tropical representative of the Arid Lower Tropical *hastatus*, the new form ranging from 1400 feet in extreme southeastern Sonora, to the mountains of Durango and southeastern Sinaloa. These are herewith described.

My acknowledgments are gratefully made to Dr. Herbert Friedmann and the Smithsonian Institution for the loan of the Type of *Megascops hastatus* and permission to examine the P. W. Shufeldt specimens from Campeche, to Mr. James L. Peters for permission to inspect the Type of *Megascops vinaceous* in the Museum of Comparative Zoology, to Mr. John T. Zimmer for courtesies in supplying necessary supplementary material from the American Museum of Natural History, to Mrs. Donald R. Dickey for permission to inspect the specimen mentioned and to Dr. Louis B. Bishop for the loan of a very important series of *cineraceous* and *xantusi*.

Otus asio sinaloensis, subsp. nov.

SINALOA SCREECH OWL.

Type.—Male adult in full breeding condition; number 7332, collection of Robert T. Moore; original field number 19264; Guamuchil, northwestern Sinaloa, Mexico; March 19, 1934; altitude 45 feet; collected by Chester C. Lamb.

Subspecific characters.—Nearest to *Otus asio vinaceous* (Brewster), but grayer both above and below, distinctly less buffy on throat and upper back; light bars on outer webs of longest primary equal in width to dark bars, instead of narrower; light bars on proximal half of inner webs of same feathers much broader, wider than the darker interspaces; light colored marks on outer webs of exterior row of scapulars, where not vermiculated, much lighter buff; size smaller. *Sinaloensis* differs from *cineraceous* and *gilmani* of the southern border of the United States, in having the dark markings both above and below much finer and more delicately penciled and the legs heavily vermiculated with cinnamon or dark brown; a slightly more buffy cast both above and below and size smaller.

Range.—True *sinaloensis* is a bird of the cacti association of the Arid Lower Tropical Zone of northwestern Sinaloa. It probably nests in the several species of huge columnar cacti, having habits similar to those of *gilmani* of the cacti deserts of southern Arizona. The two specimens, taken on the Guirocoba Ranch, come from the higher altitude of 1460 feet, where the large cacti are scarce, streams bordered by enormous cypresses and the foothills heavily wooded with Palo Blanco. These birds are intergrades with *vinaceous*, but closer to *sinaloensis*, having the same wing markings, but a more buffy cast both above and below. One female from El Orito at a higher altitude in northeastern Sinaloa, Moore collection No. 8494, is closer to *vinaceous* than to *sinaloensis*, having the wing markings and deep buffy coloration of the latter, as well as deep buffy spots on the scapulars. Guamuchil marks the farthest south record for the species *asio*.

AVERAGE MEASUREMENTS OF *Otus asio sinaloensis* AND ALLIED RACES.

Males	*Wing.*	*Tail.*	*Culmen from cere.*
Type of *sinaloensis* from N. W. Sinaloa	142.1	75.2	12.6
1 adult from S. E. Sonora	146.9	78.2	12.3
Females			
2 adults from N. E. Sinaloa (intergrades)	152.4	72.6	13.9
Type of *vinaceous* from Durasno, Chihuahua	151.0	76.0	14.0

Remarks.—The new race bears the same relation to *vinaceous* of the Mexican plateau that *gilmani* of the Arizona desert does to *cineraceous* of the upper Sonoran zone of eastern Arizona. Hitherto the type of *vinaceous* has been unique, but the discovery of the two specimens at El Orito, in extreme northeastern Sinaloa, close to the border of Chihuahua, indicates the validity of *vinaceous* as a distinct race.

Through their more buffy, so-called "pinkish," coloration above and below and heavily vermiculated buffy legs, both *sinaloensis* and *vinaceous* reveal affinities with *mccalli* of southern Texas. *Sinaloensis*, although a grayer bird than *vinaceous*, is distinctly more buffy throughout than *gilmani* and is closer to *xantusi* of Lower California. About the same small size as the last, it differs in its more dense vermiculation and finer streaking of the abdomen; more densely, brownish vermiculated legs; spots on the outer webs of the exterior scapulars much more restricted, almost completely vermiculated; the sides, beneath the wings, and the axillars, more ochraceous buff.

Mr. Lamb reported the testes of the type of *sinaloensis* as enlarged to full size. Since the ovaries of the two females, taken at El Orito, were noted as approaching breeding condition, on March 5th, it would seem that this species probably breeds during the latter half of that month.

All of the six specimens of *sinaloensis* and *vinaceous* are in the gray phase, and no specimens in the red or intermediate phase have been collected.

Specimens examined.—*Sinaloensis* 1 ♂ (Type), Guamuchil, Sin.; 1 ♂, 1 ♀, Guirocoba, Son.; *vinaceous* 1 ♀ (Type), Durasno, Chi.; 2 ♀s El Orito, Sin.; *mccalli* 25 (including Type), Texas, Tamaulipas, Nuevo Leon; *hasbroucki* 7 (including Type), Texas; *cineraceous* 28 (including Type), Arizona, N. Mexico and Texas; *gilmani* 14 Arizona, Calif. and N. Sonora; *xantusi* 27 (including Type), Lower California.

Otus guatemalae tomlini,[1] subsp. nov.

TOMLIN'S SCREECH OWL.

Type.—Male adult in nearly unworn plumage; number 8189, collection of Robert T. Moore; La Guasimas, northeastern Sinaloa, Mexico; June 26, 1933; collected by J. T. Wright.

[1] It gives me great pleasure to commemorate a treasured friendship by naming this race for Dr. Francis H. Tomlin of Haddonfield, N. J., formerly an Associate Member of the A. O. U., who has shared with the author many a memorable "bird hunt."

Subspecific characters.—Gray phase. Nearest to *Otus guatemalae hastatus* (Ridgway), of the Arid Lower Tropical Zone of southwestern Sinaloa, but ground color of throat and breast more buffy, Cinnamon Buff,[1] and ground color of abdomen much lighter, almost pure white, as compared with the uniform pale brownish white ground color of the entire underparts of *hastatus;* mesial brown lines on underparts wider, more distinct, blackish Bone Brown as contrasted with Bister of *hastatus;* patches on scapulars, middle and greater wing coverts pure white instead of buffy; size slightly larger. Compared with *thompsoni* of Yucatan, *tomlini* has the brown markings below much darker and the ground color much whiter, is grayer above compared with *thompsoni's* Verona Brown, and has a marked hoary whitish effect on the forehead and sides of pileum, absent in the type of *thompsoni.*

Intermediate phase.—My specimen from the mountains of southeastern Sinaloa, Rancho Santa Barbara, 2500 feet, represents this intermediate phase, having the back reddish brown, but not nearly so bright a red as the red phases of *guatemalae guatemalae.* It differs from three red phase specimens from Peten, Guatemala, in having the hastate markings on the back much more distinct and the dark markings on the inner webs of primaries, secondaries and rectrices pure black instead of dark brown. It resembles closely an intermediate phase *guatemalae* from Catacombas, Honduras, in the Museum of Comparative Zoology, Collection No. 158086, except that it is slightly "redder" all over and markings of wing and tail blacker, but true to the characters of *tomlini,* the ground color of the lower underparts is pure white in marked contrast with the darker breast and throat.

No true red phase representative has yet been obtained, as the Dickey Collection specimen, termed by van Rossem a "bright rufous phase," is not nearly so bright a red as red phase individuals of true *guatemalae;* in fact it is almost identical with my intermediate phase individual.

Remarks.—The white ground color of the posterior half of the underparts is the most striking feature of the new race, when compared with other races of *guatemalae.* Because of the darker Bone Black streaks the effect of the white underparts is conspicuous. Just as the underparts are whiter, the upperparts are darker than *hastatus. Hastatus* and *thompsoni,* both from the Arid Lower Tropical of opposite coasts of Mexico, have a uniform tone throughout, although differing in color value. The new form has the bare toes, characteristic of the entire *guatemalae* group.

Range.—Arid Upper Tropical and Transition Zones in the mountains of extreme southeastern Sonora and northeastern Sinaloa to mountains of southeastern Sinaloa and Durango and possibly to the same zones in Nayarit. The ♂ and ♀ from Chacala, Durango, are darker above and may intergrade between *tomlini* and some undiscovered form in the high mountains of Durango or Zacatecas. The individual from Tepic, described in the Biologia Centrali-Americana Aves, Vol. III, p. 23, as being "decidedly darker and the black spots, especially on the under surface, wider and more

[2] Names of colors in this paper, when capitalized, are taken from Ridgway's "Color Standards and Color Nomenclature," 1912.

distinct" than *hastatus*, seems to agree with the Chacala specimens, and hailing from a higher altitude, would seem to belong to the same race.

AVERAGE MEASUREMENTS OF *Otus guatemalae tomlini* AND ALLIED RACES.

Males	*Wing.*	*Tail.*	*Culmen from cere.*
3 adults (including Type) *tomlini*	154.2	82.1	12.6
1 adult (Type) *tomlini*	158.6	84.0	13.1
2 adults (including Type) *hastatus*	149.8	78.4	11.5
1 adult, intergrade from Durango	152.8	78.6	12.0
Females			
2 adults *tomlini*	150.9	81.9	12.5
1 adult, intergrade from Durango	153.6	81.0	12.6

Specimens recently examined.—Otus guatemalae tomlini 3 ♂s, 2 ♀s (including Type) S. E. Sonora and Sinaloa, 1 ♂, 1 ♀ (probably intergrades), Durango; *Otus guatemalae hastatus* 2 (including Type), Sinaloa; *Otus guatemalae guatemalae* 12 (including Type *Marmoratus*), Guatemala; *Otus guatemalae thompsoni* 3 (including co-types), Yucatan, and 2 Campeche (probably intergrades); *Otus guatemalae cassini* 2 (including Type).

According to the author's concept, *Otus asio sinaloensis* is the most southern representative of *asio* group, while *Otus guatemalae tomlini* is the most northern representative of the *guatemalae* group. The two species are clearly differentiated from each other by characters, pointed out by Ridgway. *Guatemalae* has completely bare toes, whereas *asio* has them feathered or bristled. In reemphasizing this distinction, I am familiar with recent investigations, which indicate that many northern species of owls show a marked diminution in the feathering of the toes in their southern races. This is generally true of the *asio* group, but individual variation in the species, irrespective of latitude, is evident, for specimens of *kennicoti* from Vancouver Island show nothing but bristles and a *gilmani* from Arizona is heavily and completely feathered. On the other hand I have before me thirty-three specimens of the *guatemalae* group and have seen many more, both in the United States and European Museums, and not one exhibits either feathers or bristles on the toes. The discovery, here recorded for the first time, of the presence of representatives of both groups in the same locality, makes a comparison of their characters significant. True *asio sinaloensis* ranges from the Arid Lower Tropical Zone up to the Arid Upper Tropical Zone, whereas true *guatemalae tomlini* ranges from the Transition Zone down to the Arid Upper Tropical Zone and both forms are found in the Arid Upper Tropical at Guirocoba in southeastern Sonora and in the lower margin of the Transition Zone in extreme northeastern Sinaloa. If the two species intergrade, we would surely find evidence of it here, but in no other locality are their respective characters more clearly marked. Every one of the five specimens of *sinaloensis* has bristled toes, as well as extremely narrow streaks above and below, whereas all five individuals of *tomlini* possess bare toes, wide hastate marks above and coarse vermiculations below. In addition these latter five, all gray

phases, are so heavily marked above and below with Pinkish and Cinnamon Buff that, when compared with the gray phase specimens of *sinaloensis*, they are as brown as intermediate phases of the *asio* group.

Griscom has already suggested (Bulletin, American Museum of Natural History, Vol. LXIV, p. 170) that *Otus cassini* Ridgway is best treated as a subspecies of *O. guatemalae*. The accumulation of specimens during the five years that have intervened now makes it necessary to go a step farther and suggest the conspecific relationship of *guatemalae* and *cassini* to *thompsoni*, *hastatus* and *tomlini*. This is not the place to discuss the details of the complicated relationships of this difficult genus. I shall only remark here, that these five new specimens from Sinaloa throw such new light on the affinities of the two Durango specimens with certain individuals from Guatemala, while two new specimens in my collection from Motzorongo, Vera Cruz, so illuminate the connection between *cassini* of the humid slopes of Orizaba with three specimens of *thompsoni* affinities in the Shufeldt Collection from Campeche and with three American Museum specimens from Nicaragua, that the conspecific relationship of all is clearly indicated and a new approach to the seeming idiosyncrasies of *guatemalae* required. I might add I am convinced that the geographical gap between Durango and Campeche contains an undescribed race, to which the individuals from Durango and Campeche both are related as intergrades. It will be well to await further material before describing it.